

**gonadotropin** (gō' nad-ō-trō' pin, gon' ā-dō-)

1. A hormone capable of promoting gonadal growth and function; such effects, as exerted by a single hormone, usually are limited to discrete functions or histologic components of a gonad, such as stimulation of follicular growth or of androgen formation; most gonadotropins exert their effects in both sexes, although the effect of a given gonadotropin will differ in males and females.
2. Any hormone that stimulates gonadal function.
3. Any substance that has the combined effects of follicle-stimulating hormone and luteinizing hormone.

Syn: gonadotropic hormone, gonadotrophin

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## Definition of Gonadotropin

**Gonadotropin:** Hormones that are secreted by the pituitary gland, and that affect the function of the male or female gonads.

See follicle-stimulating hormone, human chorionic gonadotropin.

# gonadotropin



go·nad·o·tro·pin [ gō nàddə trŏpin, gònnədə trŏpin ]  
(*plural* go·nad·o·tro·pins) *or* go·nad·o·tro·phin [ gō nàddə  
trŏfin, gònnədə trŏfin ] (*plural* go·nad·o·tro·phins)

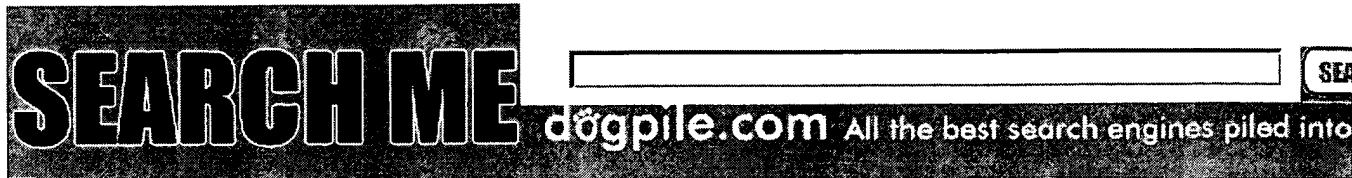
noun

## Definitions:

**gonad-stimulating hormone:** a hormone secreted by the pituitary gland, and in some mammals by the placenta during pregnancy, that influences gonadal activity, including the onset of sexual maturity and regulation of reproductive activity



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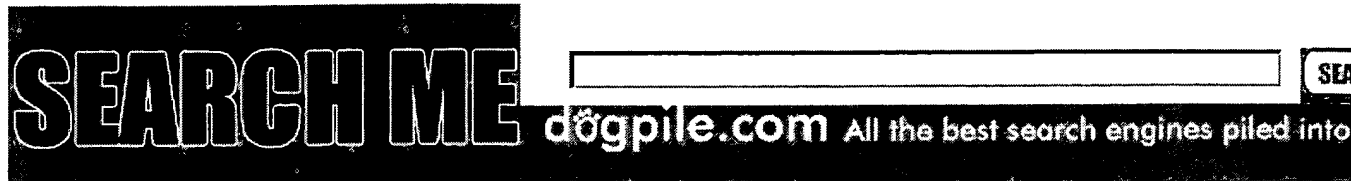
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1516351 PMID: 8828428

Basal and stimulated gonadotropin levels in the perimenopause .

Schmidt P J; Gindoff P R; Baron D A; Rubinow D R

Section on Behavioral Endocrinology, National Institute of Mental Health,  
Bethesda, MD 20892-1276, USA.

American journal of obstetrics and gynecology (UNITED STATES) Sep 1996,  
175 (3 Pt 1) p643-50, ISSN 0002-9378 Journal Code: 0370476

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

Subfile: AIM; INDEX MEDICUS

OBJECTIVE: We investigated whether perimenopausal menstrual cycle irregularity is associated with increased gonadotropin immunoactivity, bioactivity, or the bioactivity/immunoactivity ratio at baseline and after short-term stimulation with gonadotropin-releasing hormone. STUDY DESIGN: Subjects consisted of four groups: (1) young regular cycling women (< 35 years old), older women (> 35 years) with (2) regular or (3) irregular menstrual cycles, and (4) postmenopausal women. Gonadotropin-releasing hormone stimulation tests (100 micrograms intravenous gonadotropin-releasing hormone) were performed in the National Institute of Mental Health outpatient clinic during the follicular phase of the menstrual cycle or randomly in postmenopausal women. RESULTS: Perimenopausal women had baseline follicle-stimulating hormone and luteinizing hormone levels and stimulated follicle-stimulating hormone levels (area under the curve) that were similar to those of postmenopausal women and significantly greater than those of control (younger and older) women. Postmenopausal women had significantly greater baseline levels of luteinizing hormone bioactivity than did the other three groups. The bioactivity/immunoactivity ratio in the postmenopausal women was significantly greater than those in the perimenopausal and older cycling women, which were similar. No change in the bioactivity/immunoactivity ratio was seen after gonadotropin-releasing hormone stimulation in any group. CONCLUSIONS: Although the perimenopause is associated with increases in baseline and stimulated gonadotropin levels similar to those seen after the menopause, significantly increased baseline luteinizing hormone bioactivity and the bioactivity/immunoactivity ratio are seen only after the menopause.

Tags: Female

11287876 PMID: 8616535

Gonadotropins and gonadotropin receptors during the perimenopause .  
Vihko K K; Kujansuu E; Morsky P; Huhtaniemi I; Punnonen R  
Medical School, Department of Obstetrics and Gynecology, Tampere  
University Hospital, Finland.

European journal of endocrinology / European Federation of Endocrine  
Societies (NORWAY) Mar 1996, 134 (3) p357-61, ISSN 0804-4643

Journal Code: 9423848

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Document type: Journal Article

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Twenty-two perimenopausal patients (aged 47-56 years) admitted for elective abdominal hysterectomy and salpingo-oophorectomy were selected to understand better the clinical significance of increasing gonadotropin levels as an indicator of target organ responsiveness. Prior to anesthesia, blood was drawn from the patients for subsequent analyses of serum follicle-stimulating hormone (FSH), luteinizing hormone (LH) and 17beta-estradiol (E2) levels. Ovarian tissue was obtained during surgery and frozen at -70 degrees C for subsequent analyses for FSH and LH receptor content. The phase of the menstrual cycle of the patients or postmenopause was determined by serum gonadotropin and E2 levels and histological evaluation of the endometrium. Patients with no detectable FSH receptors showed significantly higher serum FSH and LH levels (4.7- and 4.3-fold, respectively) when compared to patients with detectable FSH receptors; FSH receptors were present in 27% of the patients, LH receptors were present in 68% of the patients and a negative correlation was found between serum LH levels and ovarian LH receptors. In postmenopausal patients, neither FSH receptors nor LH receptors were detectable. High serum gonadotropin levels in perimenopausal patients thus suggest the existence of low or undetectable ovarian gonadotropin receptor levels.

Tags: Female; Research Support, Non-U.S. Gov't

10448774 PMID: 8133217

Immunological activities of highly purified isoforms of human FSH correlate with in vitro bioactivities.

Burgon P G; Robertson D M; Stanton P G; Hearn M T

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Journal of endocrinology (ENGLAND) Dec 1993, 139 (3) p511-8, ISSN 0022-0795 Journal Code: 0375363

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Languages: ENGLISH

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In a recent study, a five- to eightfold range in human FSH radioreceptor activity (RRA) was documented for highly purified isoforms of FSH when the data were expressed on an FSH protein content basis as determined by amino acid analysis. This study examined the FSH in vitro bioactivity and immunoactivity of these preparations. FSH in vitro biological activity showed a five- to eightfold range in activity with a high correlation with the RRA values ( $r = 0.82$ ). A similar five- to eightfold range of values was obtained with a specific FSH radioimmunoassay and an FSH two-site immunoassay with high correlations again observed between each other, between each immunoassay and with either the in vitro bioassay or the RRA method ( $r = 0.77-0.995$ ). Although there was overall a close correlation between these assays, significant differences in ratios of activities between the in vitro bioassay and other methods were observed with highly purified FSH isoform preparations from different pI regions. The high correlation between in vitro bioassay/RRA methods and immunoassay methods over a wide range of isoform specific activities suggests that these methods are detecting similar structural features on each isoform. It is thus concluded that these immunoassays are not solely measuring hormone mass based entirely on amino acid composition. This conclusion raises questions about ratio measurements of FSH, where immunoassay methods are presumed to measure total protein content, and their application in physiological situations and clinical practice.

Tags: Comparative Study; Research Support, Non-U.S. Gov't

Descriptors: \*Biological Assay ; \*Follicle Stimulating Hormone --immunology--IM; Fluoroimmunoassay; Humans; Isomerism; Radioimmunoassay; Radioligand Assay

CAS Registry No.: 9002-68-0 (Follicle Stimulating Hormone)

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